



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
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Canada

Tel (613) 632-5200  
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SWA6A-2

Job Sheet 186730



Part No: SWA6A-2

Job Qty: 1 ea

Part Name: Electric Swivel 6,000 lb Safe Work Load (2,721 Kg)



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 11/20/18

Job Tracking No:

Due Date: 12/27/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG SWA6A-2 Rev4 IPP Rev A 17.11.15 New issue DP Verify DD

Ship Via:

### Bill of Materials

### Job Routing

| Op No | Operation          | Qty   | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off       |
|-------|--------------------|-------|------------|----------|-----------|---------|-----------------------|-----------|----------------|
|       |                    |       |            |          | Setup Hrs | Run Hrs | Workcenter / Supplier | Lead Time |                |
| 90    | Start up Operation | 1 Ea  |            | 12/27/18 | 0.00      | 0.00    | Start Up Small Fab-2  |           |                |
| 110   | Small Fab          | 1 pcs |            | 12/27/18 | 0.00      | 2.00    | Small Fab-6           |           | AP             |
| 120   | QC                 | 1 pcs |            | 12/27/18 | 0.00      | 0.00    | QC5                   |           | DAS 30         |
| 125   | DC                 | 1 pcs |            | 12/27/18 | 0.00      | 0.00    | DC                    |           | DAS 4          |
| 130   | Packaging          | 1 pcs |            | 12/27/18 | 0.00      | 0.00    | Packaging3            |           | DAS 30         |
| 140   | QC21-FG            | 1 Ea  |            | 12/27/18 | 0.00      | 0.00    | QC21                  |           | 21 DEC 10 2018 |

Part Op 110 - Assemble as per DWG. Sheet 1 \*\*\*All assembly to be done in accordance with SWA swivel manual\*\*\* Engrave T/N Descriptions: And / or S/N number as required Using Marktronic engraver as per DWG. Laser engrave dart logo as per DWG.

120 - Engrave T/N And / or S/N number as required Using Marktronic engraver as per DWG.

125 - Photocopy blue file OM & OOPM-SWA6A Rev2

130 - Bag and tag

LOCTITE 620 (M138933)  
GREASE AEROSHELL NO. 7 (M138724) SILICONE GE. (M138994)  
SAF-T-FZE (M128063) LOCTITE 242 (M138933)

### Job BOM

| Part / Item       | Component Name                        | Quantity    | Operation             | Container |
|-------------------|---------------------------------------|-------------|-----------------------|-----------|
| SWA6A-800A        | Connector Bushing                     | 1 Ea (1 ea) | 90-Start up Operation | 5031156   |
| 188-FPSS-1032-5/8 | Set Screw                             | 1 Ea (1 ea) | 110-Small Fab         | 5037083   |
| 188-FSCS-1032-5/8 | Set Screw                             | 4 Ea (4 ea) | 110-Small Fab         | 5047611   |
| C45-15-13         | Bushing for SWA6A                     | 1 Ea (1 ea) | 110-Small Fab         | 5029370   |
| EL-PLUG-F         | 3-Prong Female Spade Plug             | 1 Ea (1 ea) | 110-Small Fab         | 5031223   |
| EL-PLUG-M         | 3-Prong Male Spade Plug               | 1 Ea (1 ea) | 110-Small Fab         | 5042957   |
| EL314-SJTOW       | Long Line Electrical Wire, 14/3 Gauge | 6 ft (6 ea) | 110-Small Fab         | 5047767   |
| SWA6A-100         | Lower End                             | 1 Ea (1 ea) | 110-Small Fab         | 5032354   |
| SWA6A-1100        | Upper Bearing                         | 1 Ea (1 ea) | 110-Small Fab         | 5128642   |
| SWA6A-1200        | Lower DU Bearing                      | 1 Ea (1 ea) | 110-Small Fab         | 5122000   |
| SWA6A-1300        | Lower Thrust Bearing                  | 1 Ea (1 ea) | 110-Small Fab         | 5077644   |
| SWA6A-1400        | Circlip Internal                      | 1 Ea (1 ea) | 110-Small Fab         | 5053840   |
| SWA6A-1800        | Cover                                 | 1 Ea (1 ea) | 110-Small Fab         | 5098582   |
| SWA6A-1900        | 1/4" Female Spade Connector           | 4 Ea (4 ea) | 110-Small Fab         | 5027243   |
| SWA6A-200         | Upper End                             | 1 Ea (1 ea) | 110-Small Fab         | 5022409   |
| SWA6A-300         | Bearing Housing                       | 1 Ea (1 ea) | 110-Small Fab         | 5101948   |
| SWA6A-400         | Thrust Washer                         | 1 Ea (1 ea) | 110-Small Fab         | 5083628   |
| SWA6A-500         | Semi Rings                            | 1 Ea (1 ea) | 110-Small Fab         | 5035127   |
| SWA6A-600         | Collar                                | 1 Ea (1 ea) | 110-Small Fab         | 5034731   |
| SWA6A-700         | Wire Clamp                            | 2 Ea (2 ea) | 110-Small Fab         | 5025329   |



DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA used: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                      |  |  |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--|--|------------------------------------|-------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                     | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Cross tube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> |                                      |  |  | Skid-tube <input type="checkbox"/> | Cross tube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
|                                                              | Skid-tube <input type="checkbox"/>                                                                                                                                                 | Cross tube <input type="checkbox"/> | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Engineering <input type="checkbox"/> |  |  |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|                                                              | Machining <input type="checkbox"/>                                                                                                                                                 | Small Fab <input type="checkbox"/>  | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Quality <input type="checkbox"/>     |  |  |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|                                                              | Thermoforming <input type="checkbox"/>                                                                                                                                             | Finishing <input type="checkbox"/>  | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Other <input type="checkbox"/>       |  |  |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                      |  |  |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

|        |         |                 |                       |
|--------|---------|-----------------|-----------------------|
| Date : | Step #: | QTY Effective : | MRB (QSI042) Approval |
|--------|---------|-----------------|-----------------------|

|                                                                                         |                                                                    |                                                             |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------|
| <b>Description Work Order Deviation</b><br><br><br><br><br><br><br><br><br><br><br><br> | <b>Disposition</b><br><br><br><br><br><br><br><br><br><br><br><br> | <b>Completed By</b><br><br>                                 |
|                                                                                         |                                                                    | <b>Lead hand / Supervisor Approval Verification</b><br><br> |
|                                                                                         |                                                                    | <b>QC / QA Coordinator Approval</b><br><br>                 |
|                                                                                         |                                                                    |                                                             |

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| <b>Root Cause</b><br><table> <tr><td>Environment</td><td><input type="checkbox"/></td><td>No Re-verification</td><td><input type="checkbox"/></td></tr> <tr><td>Design</td><td><input type="checkbox"/></td><td>Operator</td><td><input type="checkbox"/></td></tr> <tr><td>Doc/Data</td><td><input type="checkbox"/></td><td>Offset/Setup</td><td><input type="checkbox"/></td></tr> <tr><td>Equip/Tooling</td><td><input type="checkbox"/></td><td>Supplier</td><td><input type="checkbox"/></td></tr> <tr><td>Handling/Pre</td><td><input type="checkbox"/></td><td>Training</td><td><input type="checkbox"/></td></tr> <tr><td>Material</td><td><input type="checkbox"/></td><td>Use for Testing</td><td><input type="checkbox"/></td></tr> <tr><td>Internal Transport</td><td><input type="checkbox"/></td><td>Poor Information</td><td><input type="checkbox"/></td></tr> <tr><td>Tribal Knowledge</td><td><input type="checkbox"/></td><td>Rushing</td><td><input type="checkbox"/></td></tr> <tr><td>LOA</td><td><input type="checkbox"/></td><td>Product Improvement</td><td><input type="checkbox"/></td></tr> <tr><td>Substation</td><td><input type="checkbox"/></td><td>Process Improvement</td><td><input type="checkbox"/></td></tr> <tr><td>Past Expiry Date</td><td><input type="checkbox"/></td><td>Manufacturing Process</td><td><input type="checkbox"/></td></tr> <tr><td>Misidentified</td><td><input type="checkbox"/></td><td>Past Due</td><td><input type="checkbox"/></td></tr> </table> |                          |                                   | Environment              | <input type="checkbox"/> | No Re-verification       | <input type="checkbox"/> | Design | <input type="checkbox"/> | Operator | <input type="checkbox"/> | Doc/Data | <input type="checkbox"/> | Offset/Setup | <input type="checkbox"/> | Equip/Tooling | <input type="checkbox"/> | Supplier | <input type="checkbox"/> | Handling/Pre | <input type="checkbox"/> | Training | <input type="checkbox"/> | Material | <input type="checkbox"/> | Use for Testing | <input type="checkbox"/> | Internal Transport | <input type="checkbox"/> | Poor Information | <input type="checkbox"/> | Tribal Knowledge | <input type="checkbox"/> | Rushing | <input type="checkbox"/> | LOA | <input type="checkbox"/> | Product Improvement | <input type="checkbox"/> | Substation | <input type="checkbox"/> | Process Improvement | <input type="checkbox"/> | Past Expiry Date | <input type="checkbox"/> | Manufacturing Process | <input type="checkbox"/> | Misidentified | <input type="checkbox"/> | Past Due | <input type="checkbox"/> | <b>FAULT CATEGORY</b><br><table> <tr><td>Pressure/Forced</td><td><input type="checkbox"/></td><td>Temperature/Cure</td><td><input type="checkbox"/></td><td>Power Loss/Surge</td><td><input type="checkbox"/></td></tr> <tr><td>Bending</td><td><input type="checkbox"/></td><td>Set-up</td><td><input type="checkbox"/></td><td>Folio/Program</td><td><input type="checkbox"/></td></tr> <tr><td>Centre Not Concentric</td><td><input type="checkbox"/></td><td>BOM/Route</td><td><input type="checkbox"/></td><td>Grain</td><td><input type="checkbox"/></td></tr> <tr><td>Cracks</td><td><input type="checkbox"/></td><td>Broken/Damage/Defect</td><td><input type="checkbox"/></td><td>Weld</td><td><input type="checkbox"/></td></tr> <tr><td>Crimp/Kink/Ripple/Wave</td><td><input type="checkbox"/></td><td>Inspection Incomplete/Unqualified</td><td><input type="checkbox"/></td><td>Wrong Stock Pulled</td><td><input type="checkbox"/></td></tr> <tr><td>Cuffs</td><td><input type="checkbox"/></td><td>Contamination</td><td><input type="checkbox"/></td><td>Out of Sequence</td><td><input type="checkbox"/></td></tr> <tr><td>Crushing</td><td><input type="checkbox"/></td><td>Countersink</td><td><input type="checkbox"/></td><td>Off-set</td><td><input type="checkbox"/></td></tr> <tr><td>Heat Treat</td><td><input type="checkbox"/></td><td>Cut Too Short</td><td><input type="checkbox"/></td><td>Mislabeled</td><td><input type="checkbox"/></td></tr> <tr><td>Wave/Twist in Tube</td><td><input type="checkbox"/></td><td>Instructions Incomplete/Unclear</td><td><input type="checkbox"/></td><td>Fit/Function</td><td><input type="checkbox"/></td></tr> <tr><td>Marks/Chatter</td><td><input type="checkbox"/></td><td>Drill Holes</td><td><input type="checkbox"/></td><td>Misaligned/off center</td><td><input type="checkbox"/></td></tr> <tr><td></td><td></td><td></td><td></td><td>Positioned Wrong</td><td><input type="checkbox"/></td></tr> <tr><td></td><td></td><td></td><td></td><td>Outside Dimensions</td><td><input type="checkbox"/></td></tr> <tr><td></td><td></td><td></td><td></td><td>Over/Under tolerance</td><td><input type="checkbox"/></td></tr> <tr><td></td><td></td><td></td><td></td><td>Part Incorrect</td><td><input type="checkbox"/></td></tr> <tr><td></td><td></td><td></td><td></td><td>Part Lost/Missing</td><td><input type="checkbox"/></td></tr> <tr><td></td><td></td><td></td><td></td><td>Part Moved</td><td><input type="checkbox"/></td></tr> <tr><td></td><td></td><td></td><td></td><td>Drawing</td><td><input type="checkbox"/></td></tr> <tr><td></td><td></td><td></td><td></td><td>Finish</td><td><input type="checkbox"/></td></tr> <tr><td></td><td></td><td></td><td></td><td>Misread</td><td><input type="checkbox"/></td></tr> <tr><td></td><td></td><td></td><td></td><td>Turning Sequence</td><td><input type="checkbox"/></td></tr> </table> |  |  | Pressure/Forced | <input type="checkbox"/> | Temperature/Cure | <input type="checkbox"/> | Power Loss/Surge | <input type="checkbox"/> | Bending | <input type="checkbox"/> | Set-up | <input type="checkbox"/> | Folio/Program | <input type="checkbox"/> | Centre Not Concentric | <input type="checkbox"/> | BOM/Route | <input type="checkbox"/> | Grain | <input type="checkbox"/> | Cracks | <input type="checkbox"/> | Broken/Damage/Defect | <input type="checkbox"/> | Weld | <input type="checkbox"/> | Crimp/Kink/Ripple/Wave | <input type="checkbox"/> | Inspection Incomplete/Unqualified | <input type="checkbox"/> | Wrong Stock Pulled | <input type="checkbox"/> | Cuffs | <input type="checkbox"/> | Contamination | <input type="checkbox"/> | Out of Sequence | <input type="checkbox"/> | Crushing | <input type="checkbox"/> | Countersink | <input type="checkbox"/> | Off-set | <input type="checkbox"/> | Heat Treat | <input type="checkbox"/> | Cut Too Short | <input type="checkbox"/> | Mislabeled | <input type="checkbox"/> | Wave/Twist in Tube | <input type="checkbox"/> | Instructions Incomplete/Unclear | <input type="checkbox"/> | Fit/Function | <input type="checkbox"/> | Marks/Chatter | <input type="checkbox"/> | Drill Holes | <input type="checkbox"/> | Misaligned/off center | <input type="checkbox"/> |  |  |  |  | Positioned Wrong | <input type="checkbox"/> |  |  |  |  | Outside Dimensions | <input type="checkbox"/> |  |  |  |  | Over/Under tolerance | <input type="checkbox"/> |  |  |  |  | Part Incorrect | <input type="checkbox"/> |  |  |  |  | Part Lost/Missing | <input type="checkbox"/> |  |  |  |  | Part Moved | <input type="checkbox"/> |  |  |  |  | Drawing | <input type="checkbox"/> |  |  |  |  | Finish | <input type="checkbox"/> |  |  |  |  | Misread | <input type="checkbox"/> |  |  |  |  | Turning Sequence | <input type="checkbox"/> |
| Environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <input type="checkbox"/> | No Re-verification                | <input type="checkbox"/> |                          |                          |                          |        |                          |          |                          |          |                          |              |                          |               |                          |          |                          |              |                          |          |                          |          |                          |                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        |                          |  |  |  |  |         |                          |  |  |  |  |        |                          |  |  |  |  |         |                          |  |  |  |  |                  |                          |
| Design                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/> | Operator                          | <input type="checkbox"/> |                          |                          |                          |        |                          |          |                          |          |                          |              |                          |               |                          |          |                          |              |                          |          |                          |          |                          |                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        |                          |  |  |  |  |         |                          |  |  |  |  |        |                          |  |  |  |  |         |                          |  |  |  |  |                  |                          |
| Doc/Data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <input type="checkbox"/> | Offset/Setup                      | <input type="checkbox"/> |                          |                          |                          |        |                          |          |                          |          |                          |              |                          |               |                          |          |                          |              |                          |          |                          |          |                          |                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| Equip/Tooling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| Handling/Pre                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           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| Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Internal Transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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        |                          |  |  |  |  |         |                          |  |  |  |  |        |                          |  |  |  |  |         |                          |  |  |  |  |                  |                          |
| Tribal Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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| LOA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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| Substation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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        |                          |  |  |  |  |         |                          |  |  |  |  |        |                          |  |  |  |  |         |                          |  |  |  |  |                  |                          |
| Past Expiry Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> | Manufacturing Process             | <input type="checkbox"/> |                          |                          |                          |        |                          |          |                          |          |                          |              |                          |               |                          |          |                          |              |                          |          |                          |          |                          |                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| Misidentified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| Pressure/Forced                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| Bending                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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| Centre Not Concentric                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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        |                          |  |  |  |  |         |                          |  |  |  |  |        |                          |  |  |  |  |         |                          |  |  |  |  |                  |                          |
| Cracks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/> | Broken/Damage/Defect              | <input type="checkbox"/> | Weld                     | <input type="checkbox"/> |                          |        |                          |          |                          |          |                          |              |                          |               |                          |          |                          |              |                          |          |                          |          |                          |                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| Crimp/Kink/Ripple/Wave                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| Cuffs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| Crushing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Wave/Twist in Tube                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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| Marks/Chatter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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 |                          |                    |                          |                  |                          |                  |                          |         |                          |     |                          |                     |                          |            |                          |                     |                          |                  |                          |                       |                          |               |                          |          |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              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 |                          |                    |                          |                  |                          |                  |                          |         |                          |     |                          |                     |                          |            |                          |                     |                          |                  |                          |                       |                          |               |                          |          |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| OTHER : <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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## Job Allocations

| Operation             | Component Part    | Required | Inventory | Allocated |
|-----------------------|-------------------|----------|-----------|-----------|
| 90-Start up Operation | SWA6A-800A        | 1        | 14        | 0         |
| 110-Small Fab         | 188-FPSS-1032-5/8 | 1        | 150       | 0         |
|                       | 188-FSCS-1032-5/8 | 4        | 241       | 0         |
|                       | C45-15-13         | 1        | 23        | 0         |
|                       | EL-PLUG-F         | 1        | 24        | 0         |
|                       | EL-PLUG-M         | 1        | 69        | 0         |
|                       | EL314-SJTOW       | 6        | 432       | 0         |
|                       | SWA6A-100         | 1        | 1         | 0         |
|                       | SWA6A-1100        | 1        | 32        | 0         |
|                       | SWA6A-1200        | 1        | 17        | 0         |
|                       | SWA6A-1300        | 1        | 13        | 0         |
|                       | SWA6A-1400        | 1        | 12        | 0         |
|                       | SWA6A-1800        | 1        | 12        | 0         |
|                       | SWA6A-1900        | 4        | 503       | 0         |
|                       | SWA6A-200P        | 1        | 1         | 0         |
|                       | SWA6A-300         | 1        | 12        | 0         |
|                       | SWA6A-400P        | 1        | 2         | 0         |
|                       | SWA6A-500P        | 1        | 1         | 0         |
|                       | SWA6A-600P        | 1        | 1         | 0         |
|                       | SWA6A-700         | 2        | 6         | 0         |
|                       | SWA6A-900A        | 1        | 19        | 0         |

## Part Specifications

**DART**  
AEROSPACE1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
CANADA  
TEL: 1 613 632-5200  
Email: sales@dartaero.com  
www.dartaerospace.com

PM Dart.lajeunesse.marie

Container No: S133881



Part: SWA6A-2

Job No: 186730

Serial No/Batch: S133881

Revision: 4

Inspector:

Exp Date:

Instructions:

Date: 12/03/16



DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------|-----------------------------------------------|------------------------------------|-------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube <input type="checkbox"/></td> <td style="width: 15%;">Cross tube <input type="checkbox"/></td> <td style="width: 15%;">Water Jet <input type="checkbox"/></td> <td style="width: 15%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> |                                                            |                                                |                                               | Skid-tube <input type="checkbox"/> | Cross tube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Cross tube <input type="checkbox"/>                                                                                                                                                | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Engineering <input type="checkbox"/>                       |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quality <input type="checkbox"/>                           |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Other <input type="checkbox"/>                             |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                            |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Date : _____                                                 | Step #: _____                                                                                                                                                                      | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                            | MRB (QSI042) Approval                          |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Description Work Order Deviation                             |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Disposition                                                |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Completed By                                               |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Lead hand / Supervisor Approval Verification               |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | QC / QA Coordinator Approval                               |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Root Cause                                                   |                                                                                                                                                                                    | FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                            |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/>                                                                                                                                        | Pressure/Forced <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>      | Positioned Wrong <input type="checkbox"/>     |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Design <input type="checkbox"/>                              | Operator <input type="checkbox"/>                                                                                                                                                  | Bending <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>         | Outside Dimensions <input type="checkbox"/>   |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Doc/Data <input type="checkbox"/>                            | Offset/Setup <input type="checkbox"/>                                                                                                                                              | Centre Not Concentric <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                 | Over/Under tolerance <input type="checkbox"/> |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Equip/Tooling <input type="checkbox"/>                       | Supplier <input type="checkbox"/>                                                                                                                                                  | Cracks <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                  | Part Incorrect <input type="checkbox"/>       |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Handling/Pre <input type="checkbox"/>                        | Training <input type="checkbox"/>                                                                                                                                                  | Crimp/Kink/Ripple/Wave <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>    | Part Lost/Missing <input type="checkbox"/>    |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Material <input type="checkbox"/>                            | Use for Testing <input type="checkbox"/>                                                                                                                                           | Cuffs <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>       | Part Moved <input type="checkbox"/>           |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Internal Transport <input type="checkbox"/>                  | Poor Information <input type="checkbox"/>                                                                                                                                          | Crushing <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>               | Drawing <input type="checkbox"/>              |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Tribal Knowledge <input type="checkbox"/>                    | Rushing <input type="checkbox"/>                                                                                                                                                   | Heat Treat <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>            | Finish <input type="checkbox"/>               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| LOA <input type="checkbox"/>                                 | Product Improvement <input type="checkbox"/>                                                                                                                                       | Wave/Twist in Tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>          | Misread <input type="checkbox"/>              |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Substation <input type="checkbox"/>                          | Process Improvement <input type="checkbox"/>                                                                                                                                       | Marks/Chatter <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/>     |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Past Expiry Date <input type="checkbox"/>                    | Manufacturing Process <input type="checkbox"/>                                                                                                                                     | OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                            |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                            |                                                |                                               |                                    |                                     |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |



DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

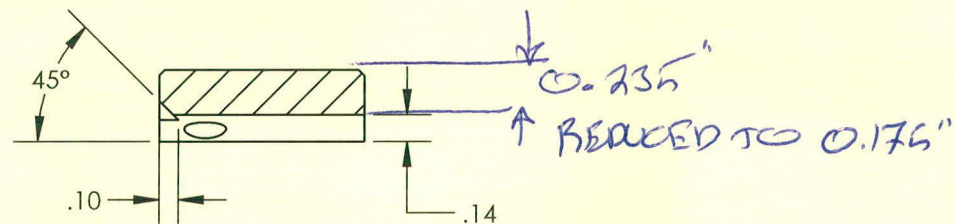
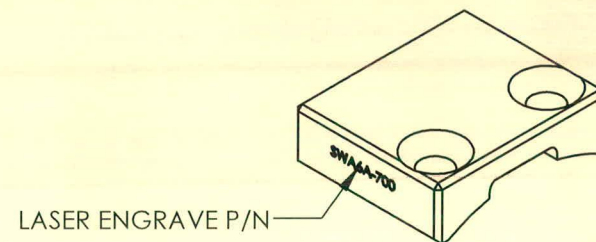
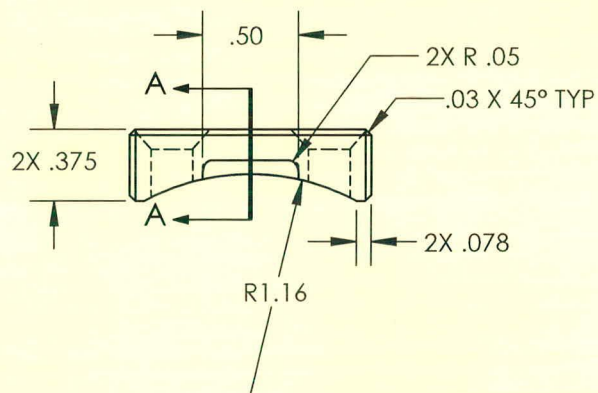
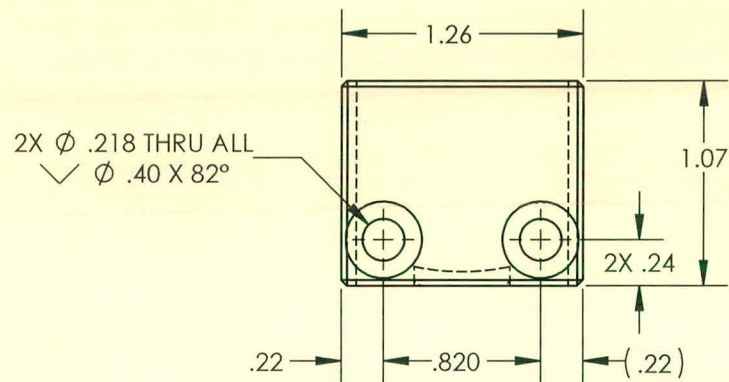
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| Work Order: <u>186730</u><br>Part No. <u>SWA### Swivels</u><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>DISPOSITION</b><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>AGAINST DEPARTMENT/PROCESS</b><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                        |  |                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Date: <u>2018/11/30</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Step #: _____                 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Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | MRB (QSI042) Approval<br><i>M. Lee</i><br>Feb 01, 2018 |  |                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Description Work Order Deviation</b><br>- Use a combination of heatshrink tubing and RTV Silicone to create a watertight seal around all electrical connections.<br>- Use a D2728-1 Placard in place of the laser engraved Dart logo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Disposition</b><br>These deviations are acceptable to carry out on the following swivels:<br>- SWA3<br>- SWA6A<br>- SWA10A<br>- SWA15A<br>- SWA25A<br>- PSWA25A<br>There is no impact on fit, form or function.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                                        |  | <b>Completed By</b><br><i>A. PATRY</i><br><b>Lead hand / Supervisor Approval Verification</b><br><br><b>QC / QA Coordinator Approval</b> |  |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Root Cause</b><br><table border="0" style="width:100%;"> <tr> <td style="width:50%;">           Environment <input type="checkbox"/><br/>           Design <input checked="" type="checkbox"/><br/>           Doc/Data <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Pre <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Internal Transport <input type="checkbox"/><br/>           Tribal Knowledge <input type="checkbox"/><br/>           LOA <input type="checkbox"/><br/>           Substation <input type="checkbox"/><br/>           Past Expiry Date <input type="checkbox"/><br/>           Misidentified <input type="checkbox"/> </td> <td style="width:50%;">           No Re-verification <input type="checkbox"/><br/>           Operator <input type="checkbox"/><br/>           Offset/Setup <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Training <input type="checkbox"/><br/>           Use for Testing <input type="checkbox"/><br/>           Poor Information <input type="checkbox"/><br/>           Rushing <input type="checkbox"/><br/>           Product Improvement <input checked="" type="checkbox"/><br/>           Process Improvement <input checked="" type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Past Due <input type="checkbox"/> </td> </tr> </table> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Environment <input type="checkbox"/><br>Design <input checked="" type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input checked="" type="checkbox"/><br>Process Improvement <input checked="" type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | <b>FAULT CATEGORY</b><br><table border="0" style="width:100%;"> <tr> <td style="width:33%;">           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Centre Not Concentric <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>           Cuffs <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Heat Treat <input type="checkbox"/><br/>           Wave/Twist in Tube <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/> </td> <td style="width:33%;">           Temperature/Cure <input type="checkbox"/><br/>           Set-up <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Inspection Incomplete/Unqualified <input type="checkbox"/><br/>           Contamination <input type="checkbox"/><br/>           Countersink <input type="checkbox"/><br/>           Cut Too Short <input type="checkbox"/><br/>           Instructions Incomplete/Unclear <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/> </td> <td style="width:33%;">           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set <input type="checkbox"/><br/>           Mislabeled <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/> </td> <td style="width:33%;">           Positioned Wrong <input type="checkbox"/><br/>           Outside Dimensions <input type="checkbox"/><br/>           Over/Under tolerance <input type="checkbox"/><br/>           Part Incorrect <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Part Moved <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Misread <input type="checkbox"/><br/>           Turning Sequence <input type="checkbox"/> </td> </tr> </table> |  |                                                        |  |                                                                                                                                          |  | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/> | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Mislabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/> |
| Environment <input type="checkbox"/><br>Design <input checked="" type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input checked="" type="checkbox"/><br>Process Improvement <input checked="" type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> |                               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| Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Mislabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/>                                                                                   | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/>                                                                                                             |      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| OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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This drawing, specifications, and concepts contained here in are the sole property of Red Barn Machine, and may not be reproduced or used in any fashion without the prior written permission of Red Barn Machine.

| REVISIONS |                   |            |         |          |
|-----------|-------------------|------------|---------|----------|
| REV       | DESCRIPTION       | DATE       | INITIAL | APPROVED |
| 3         | AS DRAWN BY CANAM | 11/13/2012 | JAG     |          |



SECTION A-A

| ASSY QTY | ASSY QTY | B/O | Part #    | UNIT QTY | Description | Material | B/O INFORMATION OR SPECIFICATIONS |
|----------|----------|-----|-----------|----------|-------------|----------|-----------------------------------|
|          |          |     | SWA6A-700 | 1        | WIRE CLAMP  | 6061-T6  | 1/2 X 1-3/8 X 1-1/4               |

|                                                                                                               |                                         |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------|
|  <b>RED BARN MACHINE</b> |                                         |
| <b>TITLE</b><br>WIRE CLAMP                                                                                    |                                         |
| <b>DWG NO.</b><br>SWA6A-700                                                                                   | <b>REV</b><br>3                         |
| <b>MAT'L</b> 6061-T6                                                                                          | <b>DRAWN BY:</b> CANAM                  |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES                                                        |                                         |
| .XXX $\pm$ .005<br>.XX $\pm$ .01<br>.X $\pm$ .1                                                               | FRACTIONS $\pm$ 1/32<br>ANGLES $\pm$ 5° |
| 1. BREAK ALL SHARP EDGES .015 x 45°<br>OR .015R<br>2. DIMENSIONAL LIMITS APPLY AFTER<br>PLATING               |                                         |
| <b>HEAT TREAT FINISH</b> BLACK ANODIZE                                                                        |                                         |
| SPEC MIL-A-8625, TYPE III, CLASS II<br>USED ON MODEL                                                          |                                         |
| <b>SCALE</b> 1:1                                                                                              | <b>DATE</b> 2/19/2002                   |
| SHEET 1 OF 1                                                                                                  |                                         |





Entered: \_\_\_\_\_ Date: \_\_\_\_\_



# WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Job: <u>186730</u><br><br>Part No. SAW6A-700 Rev. 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input checked="" type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div> |  |                                                                                                                                                                                                |  |
| Date : <u>2018/12/07</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | <b>MRB (QSI042)</b><br><br>December 7, 2018<br><br><i>MLee</i><br><br><b>Completed By</b><br><br><u>ALAIN PATRY</u><br><br><b>Lead hand / Supervisor</b><br><br><br><b>QC / QA Coordinator</b> |  |
| <b>Description Work Order Deviation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   | <b>Disposition</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                |  |
| When assembling a SWA6A-2 it was noticed that the clamping compression of the SWA6A-700 onto the 2 conductor wire is not adequate.<br><br>A modified / custom SWA6A-700 with a clamping thickness of 0.175" was used in place of the standard SWA6A-700.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   | This deviation is acceptable.<br><br>The clamping force has been visually verified by Alain + Mike<br><br>No change to fit form or function.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                |  |
| <b>Root Cause</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Operator <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Presservation <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Product Improvement <input checked="" type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Human Factors <input type="checkbox"/> </div> <div> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |                                                                                                                                   | Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                |  |





Work Order

186730

Customer

11320

Number of Wires

2

Date

2018-11-30

Serial Number

S 133881

| Number of Cycles | Load (Lbs.) | Action                                             | Pass/Fail |
|------------------|-------------|----------------------------------------------------|-----------|
| 1                | 6,000       | Check for Conductivity against all wires.          | - Pass    |
| 1                | 6,000       | Check all wires for grounding against swivel body. | - Pass    |
| 1                | 3,000       | Check for Conductivity against all wires.          | - Pass    |
| 1                | 3,000       | Check all wires for grounding against swivel body. | - Pass    |
| 1                | 1,500       | Check for Conductivity against all wires.          | - Pass    |
| 1                | 1,500       | Check all wires for grounding against swivel body. | - Pass    |
| 1                | 0           | Check for Conductivity against all wires.          | - Pass    |
| 1                | 0           | Check all wires for grounding against swivel body. | - Pass    |

Test Conducted By:

Michel Lalonde

Technician

Signature:

Sylvie Pouchon  
QC 5 Small FAB / QA**Submit**

